

REMARKS

Claims 26 - 44 are pending. All other claims were previously withdrawn in a restriction response.

Claims 27, 28 are amended to rectify the dependency issue.

The rejections of the claims under § 112 and § 103 are addressed below. The Applicant requests reconsideration based on the arguments and amendments submitted herein.

Response to rejection under § 112

The Examiner rejected the claims as not being enabled by the specification, particularly as concerns the steps of "...formulating a random set of questions..." and forming a set of "disambiguated" questions. See Office Action, pages 2 – 3.

To address these concerns, Applicant has amended claim 26 to reflect that the question set is a "synonym" set related to the related to the user question based on synonyms. Since this aspect of the invention is well set out at page 62, ll. 3 – 11, and 61, ll. 4 – 37, the Applicant submits that this rejection should be moot at this point.

Concerning the disambiguated set of questions, Applicant respectfully disagrees. The Examiner noted that such term is expressly used on page 64 (ll. 8 – 9) but then apparently did not consider the content of the passage there which reads that the disambiguated set of questions is obtained "...using the WordNet semantic decoding (WSD) methodology" which is discussed at length earlier in the disclosure at pages 58 – 61, including with reference to FIG. 19. Given the lengthy explanation of how the WordNet semantic decoding operates Applicant submits that the disclosure clearly discloses how to disambiguate questions.

For these reasons Applicant requests reconsideration of the §112 rejections.

Response to rejection under § 103

The Examiner has cited the combination of Simske (US Publication No. 2004/0064447) and Wolf (US Patent No. 6,877,001) as making claims 26 – 28 obvious. This rejection is addressed through the following discussion.

First, Simske is directed to a slightly different problem, namely, how to increase the odds that a search engine query will be mapped to one or more responsive

documents. Simske's scheme takes the user question, and then constructs a number of additional queries; the original question, along with the variants, is then concatenated together (using an OR function) or provided as separate queries to separate search engines to find documents. See ¶¶ 67 – 68. Notably, however, Simske makes no mention or suggestion of what should be done with the query variants after the user has finished his/her search, let alone storing them within a speech recognition lattice.

The Examiner candidly acknowledges such fact, but asserts that one skilled in the art would nonetheless incorporate the teachings of Simske within the Wolf reference to arrive at the claimed combination. Wolf is cited basically for disclosing a speech recognition lattice that is used for recognizing voice queries and retrieving responsive documents.

The Examiner's sole basis for combining the references is based on the hypothesis that one skilled in the art would do so for the purpose of "...optimizing performance of a method for retrieving documents from a spoken query by eliminating spurious words and retaining certainty information." See e.g. page 8 of the Office Action. From the Applicant's perspective the evidence for this seems to be very thin and analysis driven primarily by hindsight. As such, and given the disparate nature of the references from the claimed inventions, the Applicant does not believe that the record supports a § 103 rejection.

Nonetheless to further distinguish the claims, the Applicant has amended claim 1. The invention of the present claims is useful for speech recognition systems in which it is desired to rapidly and effectively construct a speech lattice with good language coverage. In such systems, which are usually associated with certain task domains (e.g., a travel reservation system, customer support, etc.) the speech lattice (often in the form of a statistical language model) typically is trained based on actual user utterance examples of expected questions, in order to maximize coverage and recognition rates. This training procedure takes time, and, of course, cannot accurately predict all expected utterances.

In embodiments of claims of the present invention the task domain includes a certain content, and a target set of questions are defined for the same so that a speech lattice can be populated with such expected questions, and thus easily support queries made to such content. This target set of questions is typically defined by a requirements designer to reflect the needs of the entity which is to use the speech

lattice in a speech recognition system. In other instances the target set may be derived from studying user utterances. In any event the speech lattice is customized to support the language/grammar requirements of a certain group of users and the content.

Because it is otherwise extremely time/cost intensive (and/or impossible) to predict all versions of queries which might be made to the content of the task domain, the present invention effectuates a tool for building out the speech lattice with semantically variant questions. These semantically variant questions help to increase the coverage and accuracy of a speech recognition system which uses the lattice. A significant benefit, of course, is that it is much quicker than trying to collect/transcribe additional real user utterances, and is much less costly.

Neither of the references (nor any other reference which the Applicant is aware of) makes mention or suggests populating a speech lattice in this fashion. Nor would it be obvious to incorporate the teachings of Simske (vis-à-vis semantic variants) because the latter never mentions some kind of mapping between a set of target questions and a body of content.

Consequently reconsideration is requested for claims 26 – 28.

New claims 29 – 44

New dependent claims 29 – 37 depend from claim 1 and should be allowable for at least the same reasons. Support for such claims can be found in the disclosure at, among other places, page 61, ll. 32 – 33 (claim 29 – 30); page 64, ll. 16 – 25 (claim 31); page 63, ll. 5 – 32; (claim 32); page 55, l. 26 – page 56, l. 29 (claim 33); page 60, l. 3 – page 61, l. 3 (claim 34); page 63, ll. 14 – 17 (claim 35); pages 62 – 63 (claims 36, 37).

New independent claim 38 is directed to narrower embodiments than those set out in claim 26, and should be allowable for at least the same reasons. Dependent claim 39 is also distinctive over the prior art, and support for such claim can be found at page 56, ll. 1 – 7.

New independent claim 40 is more particularly directed to statistical language model grammars which include semantically variant words and phrases. Again, as for claims 26, 36, this claim should be similarly allowable. Dependent claims 41 - 44 find support in the specification at pages 62 – 63.

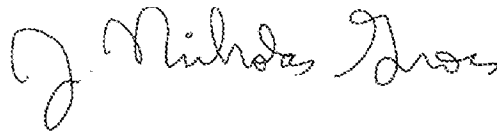
Conclusion

The rejections made by the Examiner have been addressed in full and the claims are believed to be in condition for allowance.

No additional fees are believed to be due for new claims 29 – 44, given the prior cancellation of claims 1 – 25. A petition and fee for a one month extension of time is also enclosed. Please charge the necessary fees to deposit account no. 501-244.

Should the Examiner wish to contact the undersigned at any time to discuss this case, please feel free to use the number identified below.

Respectfully submitted,

A handwritten signature in cursive script, reading "J. Nicholas Gross".

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